

# Quantitative Research on Suffixes and Grammatical Patterns in Present-day Korean

Sang-Oak Lee

In this paper, I will present a quantitative analysis of the frequency and ranking of the following items in modern Korean: (1) prefinal and final endings (the latter are used as conclusive or non-conclusive morphemes), and (2) the grammatical patterns (including adverbial phrases that are connected with the sentential adverbs). In 1997, I conducted the first survey of agglutinating suffixes, entitled "Quantitative Research on Verbal Morphemes in Modern Korean" (Lee 1997b).

<Frequency of Prefinal and Final Verbal Endings>

001 FE127	ta 다	: 6039	002 FE042	n ㄴ	: 5790
003 FE021	ko 고	: 3843	004 FE093	nun 는	: 3056
005 PFE015	ess 었	: 2454	006 FE371	e 어	: 2341 etc.

Since then a couple of others' studies on the frequency of suffixes have been reported based on their larger corpus but those of grammatical patterns not yet done by others but me as below in this paper.

<Frequency of Grammatical Patterns>

001 lgr.	-e(a) kata	-어(아) 가다	741	002 2	-ko iss ta	-고 있다	687
003 1	-ci(yo)	-지(요)	539	004 1	-e cwuta	-어 주다	468
005 1	-ci anhta(-cito anhta)	468	006 1	-e(a) ota	-어(아) 오다	428	
	-지 않다(-지도 않다)				(gr.=grade)		

etc.

The above findings are useful in the following ways: First, they are instructive in developing a rational basis for pedagogical syllabi and materials in teaching Korean as a foreign or a second language. Second, the findings can also be applied to analyzing the order of presentation of morphemes in elementary Korean materials for children in Korea. Third, the findings are relevant to machine translation because they provide information on which Korean expressions are more preferable in translation.

## 1. Introduction

### 1.1. Research Questions

This paper is a quantitative study of the frequency of simple verbal endings and complex agglutinating endings in Korean, such as pre-final

and final endings.

The paper also addresses the issue of ordering grammatical patterns for foreign learners of Korean and Korean school children in an attempt to design a rational ordering of a grammatical syllabus. Findings from this research are also useful in establishing an ordering of grammatical items for machine translation.

Though Korean is now taught around the world, and shows strong signs of continued expansion, innovation in teaching methods has been slow compared with other major languages. Indeed, beginning-level instructional materials have yet to follow a well-researched order of introduction according to grammatical principles. The research in this paper provides empirical evidence to support the development of a standardized grammatical syllabus based on real language use that can be used both to develop future materials for learners of Korean and to evaluate existing materials.

Though not central to the main research questions of this paper, the findings from this research are also important in improving the efficiency and accuracy of computer automated translation programs to and from Korean and English and Korean and Japanese. Though the results of this research apply to two seemingly different fields, they are linked by a common corpus of data derived from the same methodology. In addition, both fields are also growing in importance as the effects of globalization increase opportunities for international communication.

Seen from this perspective, this research is basic research on which other research and practical applications should be based.

## 1.2. History of Quantitative Research on Modern Korean

Examples of early quantitative research on modern Korean that follow a rigorous empirical method are Lee (1989a,b,c, 1990a,b) are noted in the references. "A Glottometrical Study of Korean Lexicon" (1989a,b,c), "The Functional Load of Phonetic and Phonological Rules in Modern Korean" (1990a), and "Functional Load of Syntactic Phenomena in Modern Korean" (1993) are based on Lee (1986), which introduced quantitative methods developed by Dr. Altmann of Bochum University to Korea. Trier University is now the center of quantitative linguistics, and the field now has an active international academic society. As a result, there is now a large literature on quantitative linguistics as applied to other languages that can be referred to.

Morphological researches by An Pyŏnghui (1965, 1967) provided a base

for the application of the above research methods. The 1956 Ministry of Education report entitled "A Survey of Word Frequency in Korean" only surveyed the frequency of the basic form of verbal endings, not their use in real language. A comprehensive survey of the use of verbal endings in agglutination had yet to appear because such research requires an immense corpus and tagging of raw data, although this is a profoundly interesting project.

In 1997, I conducted the first survey of agglutinating suffixes (e. g., conclusive morphemes and non-conclusive morphemes), entitled "Quantitative Research on Verbal Morphemes in Modern Korean" (Lee 1997b). Since then I have not been able to expand this research to a large corpus but this first pilot study already revealed a valuable index such as typical order of frequency no matter how large is the size of corpus. A couple of others' studies (Kim et al. 1998, 2000) on the frequency of suffixes have been reported based on their larger corpus but those of grammatical patterns not yet done by others. Of course, there is no other research to date on the frequency of use of both suffixes and grammatical patterns from the same corpus.

The complexity of pre-final and final verbal inflections, such as passive, causative, aspect, honorifics, and humble forms in Korean causes difficulties for foreign learners and Korean children. For example, in the agglutinating verb "kkae-tturi-si-ot-ges-sumni-da-man," foreign learners have difficulty in distinguishing boundaries among the various morphemes. In most dictionaries, some of the morphemes (kkae-, tturi-, -si- respectively and kkaetturi- as a single entry) in the above example would be listed as separate entries, but agglutinated forms are not listed. Thus, learners who cut morpheme boundaries in different ways (kkaettu-, -risi-, for example), will not be able to find the appropriate entry in the dictionary.

It may be possible to solve the problem of morpheme boundaries by listing frequently mistaken forms as separate entries, but the possible combinations of mistaken forms is immense, and it is not wise to list mistaken forms in a dictionary. What is needed instead is to help learners develop metalinguistic awareness of how to distinguish morpheme boundaries properly in the early phases of acquisition. To do so, a quantitative measure of which morphemes are used most frequently is needed to develop a grammatical syllabus that helps learners develop a sufficient metalinguistic awareness. For example, if it is found in survey of the frequency and actual use of the morpheme combination "-otket-" that the combination should be introduced to learners in the early stages of

acquisition. An understanding of the frequency of all morphemes and morpheme combinations will provide a much deeper understanding of how to develop an appropriate grammatical syllabus. In addition to conclusive final endings, this research will investigate the frequency of non-conclusive final endings. Although it is very needed to many kinds of application, a quantitatively thorough analysis of the frequency of use of these final endings has yet to appear.

2. Discussion

2.1. Research Method

Two principles are involved in the research method used in this paper. The first is related to the corpus of data, and the second is related to the method of analysis. Given that this paper is focused on the frequency of different morphemes in modern Korean, the corpus should cover all of the genres of language use found in modern (the twentieth century) Korean, but this is not only impossible from a logistical point of view, it is also an inefficient use of resources. To overcome this problem and achieve the stated goals of the research by minimal-but-meaningful investigation, the corpus was designed to include a balance of various representative genres of language use. A larger corpus is more valid than a smaller corpus, so every effort was made to use a valid-size corpus in this pilot study done by a single scholar. The corpus for this small-scale research consisted of 100,000 tokens. These tokens can be either a single word or a “nominal plus particle(s)” or a “verbal stem plus ending(s)” and be called a “orthographic word.” The choice of subcomponents (“sub-corpora”) to include in the corpus is also critical to developing a valid research design.

Table 1. Contents of the Corpora

materials	no. of tokens	proportion to the total
newspapers	31,759	30.25%
the bible	24,793	23.62%
poems	3,696	3.52%
novel	22,727	21.65%
-----	-----	-----
play	8,279	7.89%
TV drama	5,393	5.14%
current event program	3,331	3.17%
TV news	4,998	4.76%

The total number of tokens in the corpora in Table 1 is 104,976. Genres of language related to current events, such as newspapers and TV news, reveal the current trends in lexical production, whereas as the Bible (the Genesis in new translation), poems, novels, and plays reveal information on lexical comprehension. Colloquial genres of language, such as plays, TV drama, current events programs (a program entitled "Producer's Notebook"), and TV news, make up 21% of the corpus. It is tempting to argue that an ideal corpus should be based on a 50-50 balance between spoken and written language, but the corpus of spoken data presents some problems because, not only is such data difficult to process, but it is also difficult to control for the quality of the data.

Thus, if the corpus of spoken data goes much beyond 20% of the corpus, it creates more problems than it solves. Poems are not part of daily life, but they were included in the corpus because literary works contain a rich and diverse use of morphemes that should not be discounted. It is possible to question the inclusion of data from plays written in the 1940s, but such data add a diachronic element to the study that helps balance the data taken from young people today. In the case of the TV program "Producer's Notebook," the edition of the program entitled "A Look at Hungry North Korea from the Edge of the Tumang River" contains examples of spoken language in North Korea, which helps expand the range of the corpus but by less than 1% to avoid great interference.

The most accurate way to analyze the use of verbal endings and grammatical patterns in the above corpus would be for the researcher to examine the each corpus carefully qualitatively with his or her eyes, but the limitation of this method are obvious: it is impossible to deal with such a large amount of data using qualitative methods alone. Mechanical quantitative measures, meanwhile, are not suitable to catch the all of the depth of human communication in a text. This problem affects the analysis of morphemes in this paper because the methods used cannot capture the contextual details and clues that influence the interpretation of morphemes in the text. To resolve this conflict, this paper combined two research methods. To facilitate the research, a list of verbal endings and grammatical patterns, which is presented in List 1 and List 2, was devised from existing research.

#### List 1. Pre-final Verbal Endings (23 items)

ke 거 keyss 겐 n(ta)ㄴ (다) nai(ta) 나이(다) nu(n/nya/nci) 느(ㄴ/냐/ㄴ지)  
 nun(ta) 는(다) te 더 li 리 sao 사오 saop 사옴 sap 삼 si 시 ass 앓  
 ess 었 yess 었 o 오 op 옴 usi 으시 uo 으오 uop 으옴 cao 자오  
 caop 자옴 cap 잡

## List 2. Final Verbal Endings (650 items)

kena 거나 ---- cil 질 (Cf. See List 6 for details)

The list of pre-final and final endings in List 1 and List 2 above is based on an analysis of books on Korean grammar. Conclusive and non-conclusive final endings are included in the category of final verbal endings, and different allomorphs of the same morpheme are categorized.

The preliminary list of grammatical patterns was developed by analyzing basic Korean textbooks used in schools. In the process of developing the list, a rank of the introduction of the various morphemes for each textbook was recorded in the last column. The resulting comparison of the frequency of use from this study and the ranking of introduction from textbooks can be used to determine the validity of the syllabus contained in each textbook. Of course, the frequency of use of morphemes should not be the only consideration in developing an appropriate syllabus for textbooks because some verbal endings and grammatical patterns that are low in frequency are critical in certain situations. In comparison with the actual frequency of content lexical items, however, the frequency of verbal endings and grammatical patterns is an important factor in determining the grammatical syllabus because, compared with content lexical items, verbal endings, and grammatical patterns are not influenced by the conversational situation. Proof of this lies in the fact that the possible variation in grammatical patterns is greater than that in content lexical items.

A list of grammatical patterns in standard Korean textbooks is given in List 3 according to the order and the form in which they appear in a given book in List 4. Complex combinations of morphemes were not analyzed separately. In order to show the general interest of textbook authors these forms are enumerated here as collected without modification. Consequently they show individual styles, for instance, forms with or without euphonic vowels.

In spite of length I present all the list in the alphabetical order since it will serve as an co-referential index to find a certain item with its rank no. in the List 7 of frequency rank.

List 3. A Survey of Grammatical Patterns by the Korean Alphabetical Order

rank	grammatical patterns	frequency	level of textbooks	rank	grammatical patterns	frequency	level of textbooks
0148	ka anila 가 아니라	7	1	0186	-kipotanun -기보다는	4	3
0056	kacang 가장	36	2	0218	-kiya -기야	2	1
0149	kathun kes 같은 것	7	1	018	-kiekho 기여코	5	4
0045	-kena -kena -거나 -거나	54	2	0156	-kieymun(nemu ekwulhata -기에는(너무 억울하다)	6	4
0271	-kenul hamulmye -거늘 하물며	0	1	0066	-kin -긴(nominal ending + nun 는)	30	1
0083	-keuy 거의	23	2	0219	-kilay -길래	2	2
0041	(kes) pakkey(nun) (것) 밖에(는)	60	3	0016	-kka -까(interrogative)	208	1
0012	-key toyta -게 되다	243	1	0321	kkacilato 까지라도	0	1
0217	-key malyenita -게 마련이다	2	3	0095	kkuthey 끝에	18	3
0036	kyengwu(ey) 경우(에)	81	4	0220	-n kimey -ㄴ 김에	2	1
0168	-ko namyen -고 나면	5	2	0169	-n taumey -ㄴ 다음에	5	1
0076	-ko nase -고 나서	25	2	0070	-n sasil(i issta) -ㄴ 사실(이 있다)	29	1
0155	-ko naca -고 나자	6	2	0062	-n yang(ita) -ㄴ 양(이다)	31	1
0245	-ko malkoyo -고 말고요	1	2	0137	-n cekki epsta -ㄴ 적이 없다	8	1
0120	-ko poni -고 보니	11	2	0221	-n cekki issta -ㄴ 적이 있다	2	1
0002	-ko issta -고 있다	687	2	0115	-n phenyita -ㄴ 편이다	12	1
0272	-ko hayse pantusi -고 해서 반드시	0	3	0043	-n/1 tayro -ㄴ/ㄹ 대로	58	1
0196	-koca hata -고자 하다	3	3		(kkuthnanun tayro 끝나는 대로)		
0184	-kon hata -곤 하다	4	3	0060	-n/1 moyangita -ㄴ/ㄹ 모양이다	32	1
0179	kwa kathi 과 같이	5	1	0144	-n/1 pa -ㄴ/ㄹ 바	7	1
0319	-kwankeyro 관계로	0	3	0280	-n/1 paka issta -ㄴ/ㄹ 바가 있다	0	1
0064	-kwunyo -균요	30	1	0199	-n/1 pepita -ㄴ/ㄹ 법이다	3	1
0320	kulehkey -ul suka epsta 그렇게	0	1	0097	-n/1 seymita -ㄴ/ㄹ 셈이다	17	1
	-을 수가 없다			0247	-nka pota -ㄴ가 보다	1	1
0246	-ki kuciepsta -기 그지없다	1	4	0281	-na -na ttokkathita -나 -나 똑같다	0	3
0273	-ki nalumita -기 나뉘이다	0	1	0282	-na -na machankacita -나 -나 미친가지다	0	3
0037	-ki ttaymuney -기 때문에	73	1	0200	-na pota -나 보다	3	1
0104	-ki malyenita -기 마련이다	14	3	0222	-na sipta -나 싶다	2	1
0044	-ki sicakhata -기 시작하다	55	1	0092	-nayo -나요	19	1
0185	-ki silhta -기 싫다	4	1	0166	(nayka) pokieymun (내가) 보기에는(as far as)	5	1
0274	-ki wihaye -기 위하여	0	1	0283	-nyamuntusi -냐는 듯이	0	4
0050	-ki wihay(se) -기 위해(서)	46	2	0187	-neyyo -네요	4	1
0080	-ki ceney -기 전에	23	1	0284	-nolanikka -노라니까	0	1
0197	-ki ccaki epsta -기 적이 없다	3	1	0248	-nolamyen -노라면	1	3
0275	-kika musepkey -기가 무섭게	0	1	0096	-(nu)nyako (hata) -(느)냐고 (하다)	17	2
0121	-kika pappukey -기가 바쁘게	11	3	0285	-munyanun tusi -느냐는 듯이	0	1
0276	-kika potanun -기가 보다는	0	1	0170	-muni (a,yey, chalali) -지-	5	4
0215	-kika yesaita -(기가) 예사이다	2	4		느니 (아예, 차라리) -지		
0085	-kikkaci -기까지	21	3	0286	-mulanikka -느라니까	0	3
0114	-kinun -기는	12	1	0287	-nuramyen -느라면	0	1
0277	-kinun kosahako -기는 고사하고	0	4	0201	-nun killo -는 길로	3	1
0278	-kito halyeniwa -기도 하려니와	0	1	0188	-nun kiley -는 길에	4	1
0279	-kilan -기란	0	1	0189	-nun kilita -는 길이다	4	1
0065	-kilo hata -기로 하다	30	1	0288	-nun kimey -는 김에	0	2
0198	-kilul palata -기를 바라다	3	1	0249	-nun taysiney -는 대신에	1	2
0073	-kimanhamyen -기만하면	26	1				

rank	grammatical patterns	frequency	level of textbooks	rank	grammatical patterns	frequency	level of textbooks
0157	-nun tocwung(ey) -는 도중(에)	6	1	0015	malita 말이다	211	1
0111	-nun tongan(ey) -는 동안(에)	13	1	0260	mapsosa 맵소사	1	4
0171	-nun ttay -는 때	5	1	0181	myense(yo) 면서(요)	5	2
0172	-nun mankhum -는 만큼	5	1	0211	mosci anhkey 못지 않게	3	1
0250	-nun pa -는 바	1	4	0190	-puitaman -버니다만	4	4
0122	-nun paramey -는 바람에	11	1	0078	panmyen(ey) 반편(에)	25	3
0251	-nun perusi issta -는 버릇이 있다	1	1	0234	pilok (-ulcilato) 비록 (-을지라도)	2	4
0252	-nun seli issta -는 설이 있다	1	4	0094	ppun(man) anula 뵈(만) 아니라	19	1
0253	-nun ili issta -는 일이 있다	1	1	0038	sai(ey) 사이(에)	68	2
0093	-nun cem(cyse) -는 점(에서)	19	1	0099	sang(yeksasang,sasilsang)	17	4
0223	-nun cwung(ey) -는 중(에)	2	1		상(역사상, 사실상)		
0289	-nun thong(ey) -는 통에	0	1	0194	sedma 설마	4	4
0290	-nuntakena -는다거나	0	4	0046	-sulepta -스럼다	52	2
0291	-nuntey cohta -는데 좋다	0	1	0165	simcie 심지어	6	4
0254	-nuntwung manuntwung -는등 마는등	1	3	0150	amu -na 아무 -나	7	2
0255	-nuntul -는들	1	4	0048	-asstaka -왔다가	50	2
0322	-nunkenyeng -는커녕	0	3	0052	-e kaciko -어 가지고	40	1
0034	-nikka -니까(reason)	93	1	0026	-e nayta -어 내다	111	1
0017	-taka -다가	201	2	0022	-e nohta -어 놓다	140	2
0011	-tako (pota) -다고 (보다)	276	4	0067	-e talako hata -어 달라고 하다	30	1
0202	tanikka(yo) -다니까(요)	3	1	0138	-e tayta -어 태다	8	1
0224	-tatenty -다던데	2	3	0030	-e twuta -어 두다	99	1
0225	-tatunci -다든지	2	1	0081	-e tulita -어 드리다	23	1
0292	-tasiphihata -다시 피하다	0	3	0294	-e pelushata -어 버릇하다	0	3
0032	-tan mali(ya) -단 말이(야)	98	1	0028	-e pelita -어 버리다	105	2
0089	-tapta -답다	20	2	0009	-e pota -어 보다	310	1
0259	tangyenhi -ci 당연히 -지	1	4	0295	-e poassca -어 보았자	0	1
0069	taysin(ey) 대신(에)	30	2	0204	-e ppacita -어 뵈지다	3	1
0130	-tayyo -대요	9	1	0007	-e issta -어 있다	392	1
0074	-tekwun(yo) -더군(요)	26	1	0004	-e cuta -어 주다	468	1
0203	-telako(yo) -더라고(요)	3	1	0010	-e cita -어 지다	293	1
0084	tele 더러	22	3	0228	-e chiuta -어 치우다	2	1
0158	-ten ttay -던 때	6	1	0261	enu -(i)na 어느 -(이)나	1	1
0226	-ten chamita -던 참이다	2	1	0105	-eta cwuta -어다 주다	14	1
0266	(to) -ul kyem (도) -을 겸	0	1	0296	-eto kwaynchanhta -어도 괜찮다	0	1
0023	-tolok (hata) -도록 (하다)	119	2	0191	-eto toyta -어도 되다	4	1
0129	(toyl swu iss/nun han (될 수 있는) 한	9	3	0128	-eto cohta -어도 좋다	10	1
0127	-tunci -tunci -든지 -든지	10	2	0297	-ese kulayssnunci -어서 그랬는지	0	1
0227	-lanun ttus(ita) -라는 뜻(이다)	2	4	0298	-ese kulenci -어서 그런지	0	3
0293	-lak mallakhata -락 말라하다	0	1	0173	-ese cwukkeyssta -어서 죽겠다	5	1
0063	mace 마저	31	3	0139	-esenun antoyta -어서는 안되다	8	1
0164	man hayto 만 해도	6	3	0205	-eselato -어서라도	3	1
0210	manyak -umyen 만약 -으면	3	4	0001	-e(a) kata -어(아) 가다	741	1
0323	mamey hana -umyen 만에 하나 -으면	0	4	0006	-e(a) ota -어(아) 오다	428	1
0086	manil (-umyen) 만일 (-으면)	21	4	0106	-eya toyta -어아 되다	14	1
0067	manhata 만하다	36	1	0299	-eya elmana -keyssupnikka -어아 얼마나 -겠습니까	0	1



rank	grammatical patterns	frequency	level of textbooks	rank	grammatical patterns	frequency	level of textbooks
0020	-eya hata -어아 하다	153	1	0267	(u)ro malmiama (으)로 말미암아	0	1
0053	-eyakeytta -어아겠다	40	1	0071	ulo samta 으로 삼다	27	3
0061	-eyaci -어아지	32	1	0154	(u)ro inhayse (으)로 인해서	6	1
0042	-(ess)ketunyo -(었)거든요	60	2	0126	(u)ro hayse (으)로 해서	10	1
0119	-(ess)keyssna -(었)겠나	11	4	0049	(u)roputhe (으)로부터	47	1
0300	-esstayssca -었잖아	0	1	0140	-umyen hata -으면 하다	8	3
0029	-(ess)teni -(었)더니	103	2	0229	-umyen, elmana cokeysseyo -으면, 얼마나 좋겠어요	2	2
0145	-essteni -었더니	7	1	0090	-usey -으세	20	4
0192	-esstelamyen -assultheyntey -었다리면 -았을텐데	4	1	0031	-useyyo -으세요	99	4
0301	-esstelamyen -essulkel -었다리면 -었을걸	0	1	0103	-(u)sipnita -(으)십니다	14	1
0302	-esstelamyen -ulkel -었다리면 -을걸	0	2	0035	-(u)sipsio -(으)십시오	89	1
0014	-essten -었던	213	1	0256	-un kami issta -은 감이 있다	1	4
0206	-essess -었었	3	1	0112	-un keyeyyo -은 거예요	13	1
0303	-essumyen siphta -었으면 싶다	0	4	0159	-un kyelkwa(lo) -은 결과(로)	6	1
0100	ey kwanhan 에 관한	16	1	0146	-un/nunkayo -은/는가요	7	3
0304	ey talye issta 에 달려 있다	0	2	0176	-un/nunkelyo -은/는걸요	5	3
0033	ey tayhan 에 대한	95	2	0160	-un ttay -은 때	6	1
0077	ey tayhayse 에 대해서	25	2	0193	-un mankhum -은 만큼	4	1
0040	ey ttara(se) 에 따라(서)	62	1	0079	-un ili issta -은 일이 있다	24	1
0235	ey mosci anhkkey 에 못지 않게	2	1	0039	-un chay -은 채	66	3
0151	ey pulkwahata 에 불과하다	7	4	0174	-un chek(hata) -은 척(하다)	5	1
0262	ey pihamyen 에 비하면	1	1	0216	-(un) chey anhta -(은) 채 않다	2	2
0263	ey uyhamyen 에 의하면	1	3	0143	-(un) cheyhata -(은) 채하다	7	2
0024	ey issta 에 있다	114	1	0175	-(un) huey -은 후에	5	1
0324	ey cephan 에 접한	0	4	0047	-unteyyo -은데요	51	1
0236	ey cinaci anhta 에 지나지 않다	2	3	0240	unkhenyeng 은커녕	2	3
0325	eykeytunci 에게든지	0	3	0098	-ul kanungsengi issta/khuta/nophta -을 가능성이 있다/크다/놀다	17	4
0054	eyta(ka) 에다(가)	38	1	0131	-ul keyeyyo -을 거예요	9	1
0212	eyto pulkwuhako 에도 불구하고	3	3	0091	-ul kes(kkaci) epsta -을 것(까지) 없다	20	3
0305	eytunci 에든지	0	2	0123	-ul kyeyhoykita -을 계획이다	11	1
0237	eyselato 에서라도	2	3	0019	-ul/nun su(ka) epsta -을/는 수(가) 없다	169	1
0153	(ey)seputhe (예)서부터	6	1	0230	-ul torika epsta -을 도리가 없다	2	1
0238	yekan 여간	2	4	0231	-ul torika issta -을 도리가 있다	2	1
0326	yeylul tulmyen 예를 들면	0	3	0061	-ul tushata -을 듯하다	45	1
0239	yeylul tule 예를 들어	2	3	0257	-ul ttalumita -을 따름이다	1	4
0327	weynilinci 웬일인지	0	3	0018	-ul ttay -을 때	189	1
0328	weynici 웬지	0	3	0330	ul/lul mulupussuko 을/를 무릅쓰고	0	4
0269	-(u)na mana -(으)나 만나	0	1	0101	ul/lul ceyoyha(ko) 을/를 제외하고	16	4
0055	-ulamyen -오라면	36	3	0141	ul lika epsta -을 리가 없다	8	2
0136	-(u)le kata -(으)러 가다	8	1	0232	-ul maumi issta -을 마음이 있다	2	2
0072	-(u)lyeko hata -(으)려고 하다	26	1	0113	-ul mankhum -을 만큼	13	1
0270	-(u)lyenikka -(으)려니까	0	1	0107	-ul manhata -을 만하다	14	1
0183	-(u)lyetaka (mallo) -(으)려다가 (말고)	4	1	0258	-ul mokecekulo -을 목적으로	1	1
0244	-(u)lyeten channita -(으)려던 참이다	1	1	0132	-ul mulyep -을 무렵	9	4
				0329	ul patangulo 을 바탕으로	0	4

rank	grammatical patterns	frequency	level of textbooks	rank	grammatical patterns	frequency	level of textbooks
0116	-ulppenhata -을 뻔하다	12	2	0059	i anila 이 아니라	33	1
0167	-V+ul ppun(man) anila -V+을 뻔(만) 아니라	5	1	0268	(i)ko kaney (이)고 간에	0	1
0306	-ul sayngkakto moshata -을 생각도 못하다	0	1	0331	iko kaney 이고 간에	0	4
0307	-ul seng siphta -을 성 싶다	0	1	0214	(i)ko mweko (이)고 뭐고	2	1
0013	-ul swu(ka) issta -을 수(가) 있다	225	1	0241	iko mweko 이고 뭐고	2	4
0147	-ul swupakkey epsta -을 수밖에 없다	7	2	0242	ilatunci 이라든지	2	3
0108	-ul yeycengita -을 예정이다	14	1	0264	ilase 이라서	1	3
0207	-ul ili issta -을 일이 있다	3	1	0008	-(i)ya -(이)야	330	4
0308	-ul casinissta -을 자신있다	0	2	0152	iyamalo 이야말로	7	3
0309	-ul cekey -을 적에	0	1	0135	(i)oyey (이)외에	8	3
0082	-ul cengtolo -을 정도로	23	3	0213	ioyey 이외에	3	1
0177	-ul cikyengita -을 지경이다	5	4	0068	-inka -인가	30	2
0310	-ul chamita -을 참이다	0	1	0102	iltan (-ta hamyen) 일단 (-다 하면)	16	4
0109	-ul the(ita) -을 터(이다)	14	1	0118	-cako (hata) -자고 (하다)	12	2
0142	ul thotaylo 을 토대로	8	4	0233	-cani -자니	2	1
0161	ul thonghayse 을 통해서	6	2	0317	-catunci -자든지	0	1
0088	(ul) phoham(hayse) (을) 포함(해서)	20	3	0163	-camyen -자면	6	3
0162	-ul philyoka issta -을 필요가 있다	6	1	0265	cachis(hamyeon) 자칫(하면)	1	4
0311	-ul hyanghayse -을 향해서	0	2	0058	-canha(yo) -잖아(요)	33	1
0312	-ulkeyyo -을게요	0	1	0025	-cekulo -적으로	113	3
0110	-ulkka(hata) -을까(하다)	14	1	0027	-cekin -적인	109	3
0313	-ulnunci moluta -을는지 모르다	0	1	0125	cenhye 전혀	11	2
0314	-ultong maltong -을동 말동	0	4	0195	celtaylo 절대로	4	2
0315	-ullak mallak -을락말락	0	1	0332	ceykilal 계기랄	0	4
0133	-ullayyo -을래요	9	1	0333	ceyeyki 제예기	0	4
0208	-ulcilato -을지라도	3	4	0021	com 줌	145	1
0316	-ulcienceng -을지언정	0	4	0243	comcherem 줌처럼	2	4
0075	-ultheyni(kka) -을테니(까)	26	1	0334	cwusipsa 주십사	0	1
0209	-ultheymyen -을테면	3	1	0178	-ci kulay(yo) -지 그래(요)	5	2
0117	-ulthentey -을텐데	12	3	0005	-ci anhta(-cito anhta) -지 않다(-지도 않다)	468	1
0134	-umcikhata(mcikhata) -을직하다 (ㅁ직하다)	9	1	0003	-ci(yo) -지(요)	539	1
0124	uyhay 의해	11	4	0087	thas(ita) 탓(이다)	21	3
				0182	hato (nemu) -ese 학도 (너무) -어서	5	1
				0318	-hay maci anhumye -해 마치 않으며	0	4

List 3 above, which includes some adverbial phrases that are related to the structure of the sentence, is a list of grammatical patterns in standard Korean textbooks. List 4 shows the teaching materials for learners of Korean, but the titles of materials are omitted after each grammatical patterns since there were too many overlapped occurrences.

## List 4. Surveyed Teaching Materials for Learners of Korean

- Chang, Suk-in (1982) *Modern Conversational Korean*, Seoul Computer Press, Seoul.
- Park, Francis Y.T. (1984) *Speaking Korean 1·2*, Hollym Co., Seoul.
- Training Center for Korean Language and Literature (1989) *Korean 1-4*, Korean Cultural Research Center, Korea University, Seoul.
- Vandesande A.V. and Yunsook Hong (1991) *Myōngdo's Korean 1·2*, Usinsa, Seoul.
- Park, Chang-Hai and Ki-Dawk Pak (1992) *Korean 1·2: An Intensive Course*, Yonsei Univ. Press, Seoul.
- Rogers, Michael C., Clare You and Kyungnyun K. Richards (1992) *College Korean*, Univ. of California Press, Berkeley.
- Language Research Institute, Seoul National Univ. (1993) *Korean 1-2*, (1997) *Korean 3-6*, P'ungham, Seoul.
- Lee, Sang-Oak et al, (1993) *Korean through English I·II·III*, (1998) Rev. ed., Hollym Co., Seoul.
- Chang, Namgui and Yong-chol Kim (1993) *Functional Korean*, Hollym Co., Seoul.
- Korean Language Institute (1995) *Korean 1-6*, Yonsei Univ. Press., Seoul.
- Chang, Namgui and Yong-chol Kim (1996) *Active Korean: A Functional Approach*, Hollym Co., Seoul.
- Beckers-Kim, Young Ja (1996) *Koreanisch für Anfänger*, Hollym Corp., Seoul.

From the above lists, a list for the first stage of analysis was chosen. The "Search Function and Dictionary (HGREP)" developed in 1992 by Hangul and Computing, Inc., the producer of a popular Korean software program, was chosen for the first analysis. Using this program, all of the morphemes that included the letters ㄴ, ㄷ, ㅂ was excluded, because HGREP cannot analyze these consonants in the syllable-final position.

In order to expand the analysis, a program entitled "HAM" (Korean morphological parser), which was developed by Professor Kang Sung-shik of Hangeong University, was used. From an analysis of the entire corpus, results that contained the letters ㄴ, ㄷ, ㅂ were detected individually for re-evaluation. "HAM" was used in the second stage of analysis because using it from the first stage of analysis would have burdened the program excessively by showing all the possibilities of analysis. The results of the second stage of analysis are presented in the section below.

## 2.2. Results of the Analysis

### 2.2.1. Prefinal Verbal Endings

List 5. Prefinal Endings Listed by the Alphabetical Order

no.	list of morphemes	frequency	rank	no.	list of morphemes	frequency	rank
PFE001	ke	163	009	PFE013	si	352	007
PFE002	kess	453	006	PFE014	ass	1300	003
PFE003	n(ta)	454	005	PFE015	ess	2454	001
PFE004	nai(ta)	0	014	PFE016	yess	1498	002
PFE005	nu(n/nya/nci)	127	011	PFE017	o	0	014
PFE006	nun(ta)	557	004	PFE018	op	0	014
PFE007	te	196	008	PFE019	usi	34	012
PFE008	ro(kwuna/kwurye)*	4	013	PFE020	uo	0	014
PFE009	li	147	010	PFE021	uop	0	014
PFE010	sao	0	014	PFE022	cao	0	014
PFE011	saop	0	014	PFE023	caop	0	014
PFE012	sap	0	014	PFE024	cap	0	014

\*‘ro(kwuna/kwurye)로(구나/구려)’can be excluded from this list.

List 5 above reveals the ranking and frequency of appearance of pre-final verbal endings. The high frequency of the past tense morpheme “ot” is the most noticeable feature of the list. If the other two forms of the past tense morpheme (“yot” and “at”) are included, the past tense morpheme makes up 72% of all pre-final verbal endings. This result could have come from the type of texts in the corpus. This is particularly true because the Genesis from the Bible, newspaper articles and TV news, which most refer to past events, take a large portion in the corpus. However, if real language use is considered, references to past events are one of the most common and basic features of Korean language use.

### 2.2.2. Final Verbal Endings

List 6. Final Endings Listed by the Korean Alphabetical Order

rank	no.	ending	frequency	rank	no.	ending	frequency
074	FE001	kena 거나	: 54	346	FE009	ketullangun거들랑은	: 0
296	FE002	kenul거늘	: 1	094	FE010	kela 거라	: 38
235	FE003	keni 거니	: 3	143	FE011	ken 건	: 13
258	FE004	keniwa 거니와	: 2	258	FE012	kentay 건대	: 2
346	FE005	ketumyen 거드면	: 0	346	FE013	kentayn 건댄	: 0
346	FE006	ketumyenun거드면은	: 0	346	FE014	kenmanun 건마는	: 0
073	FE007	ketun 거든	: 55	214	FE015	kenman 건만	: 4
258	FE008	ketullang 거들랑	: 2	346	FE016	kesta 컷다	: 0

rank	no.	ending	frequency	rank	no.	ending	frequency
006	FE017	key 게	: 1288	055	FE049	ntanun ㄴ다는	: 85
346	FE018	keykkum 게끔	: 0	296	FE050	ntanikka ㄴ다니까	: 1
171	FE019	keyna 게나	: 8	346	FE051	ntamanun ㄴ다마는	: 0
346	FE020	keysili 게시리	: 0	346	FE052	ntanta ㄴ단다	: 0
003	FE021	ko 고	: 3843	296	FE053	ntal ㄴ달	: 1
043	FE022	konun 고는	: 118	346	FE054	ntam ㄴ담	: 0
135	FE023	koto 고도	: 14	235	FE055	ntapnikka ㄴ답니까	: 3
346	FE024	komalko 고말고	: 0	346	FE056	ntapnida ㄴ답니다	: 0
066	FE025	kose 고서	: 61	346	FE057	ntapita ㄴ답디다	: 0
296	FE026	koya 고야	: 1	346	FE058	ntapsiko ㄴ답시고	: 0
235	FE027	koca 고차	: 3	235	FE059	ntay ㄴ대	: 3
143	FE028	kon 곧	: 13	296	FE060	ntayse ㄴ대서	: 1
346	FE029	kwantey 관테	: 0	346	FE061	ntayseya ㄴ대서야	: 0
062	FE030	kwuna 구나	: 70	346	FE062	ntayya ㄴ대야	: 0
258	FE031	kwurye 구려	: 2	036	FE063	ntey ㄴ테	: 177
296	FE032	kwuryo 구료	: 1	153	FE064	nteyta ㄴ테다	: 11
235	FE033	kwumen 구먼	: 3	214	FE065	nteyto ㄴ테도	: 4
296	FE034	kwumyen 구면	: 1	296	FE066	nteyse ㄴ테서	: 1
044	FE035	kwun 군	: 117	346	FE067	ntul ㄴ들	: 0
015	FE036	ki 기	: 531	346	FE068	nmankhum ㄴ만큼	: 0
085	FE037	kilo 기로	: 45	182	FE069	npa ㄴ바	: 7
346	FE038	kilose 기로서	: 0	296	FE070	ncuk ㄴ죽	: 1
346	FE039	kilose 기로서니	: 0	346	FE071	ncuksun ㄴ죽순	: 0
346	FE040	kilosentul 기로선들	: 0	059	FE072	nci ㄴ지	: 72
087	FE041	kiey 기에	: 41	346	FE073	nciko ㄴ치고	: 0
002	FE042	n ㄴ	: 5790	346	FE074	ncila ㄴ지라	: 0
053	FE043	nka ㄴ가	: 91	035	FE075	na 나	: 180
095	FE044	nkul ㄴ걸	: 37	103	FE076	nani 나니	: 29
113	FE045	nko ㄴ고	: 24	258	FE077	nama 나마	: 2
018	FE046	nta ㄴ다	: 454	346	FE078	naikka 나이까	: 0
346	FE047	ntako ㄴ다고	: 0	(omitted in between)4)			
346	FE048	ntanunya ㄴ다느냐	: 0	118	FE650	cil 절	: 20

List 6 above shows the frequency of final verbal endings. No distinction was made between conclusive and non-conclusive final endings, so the list could have been divided into two separate lists. In that case, however, additional analysis of endings, such as “ko,” “ke,” and “na,” that do fit easily into either category would have been necessary. Given that this paper focuses on the use of morphemes in Korean education, it is worth mentioning that non-conclusive final endings are usually much more frequent than conclusive ones.

Results from List 6 indicate that the final verbal endings “da” and “-n” are by far the most frequent. The frequency of individual morphemes as shown in List 5 and List 6 is only a superficial analysis. From a pedagogical point of view, the second stage of analysis is necessary, and a

reclassification based on the grammatical categories serves that purpose.

In addition, making connections between the frequency of pre-final and final endings discussed above is also useful. This is necessary to establish an order that can be used in developing an appropriate pedagogical syllabus. A combined list of the frequency of pre-final and final verbal endings appears in Appendix A.

### 2.2.3. Grammatical Patterns

List 7. Grammatical Patterns Listed by Frequency Order

rank	grammatical patterns	freg.	level of textbooks	rank	grammatical patterns	freg.	level of textbooks
0001	-어(아) 가다 -e(a) kata	741	1	0034	-니까 -nika [reason]	93	1
0002	-고 있다 -ko issta	687	2	0035	-(으)십시오 -(u)sipsio	89	1
0003	-지(요) -ci(yo)	539	1	0036	경우(에) kyengu(ey)	81	4
0004	-어 주다 -e cwuta	468	1	0037	-기 때문에 -ki ttaymuney	73	1
0005	-지 않다(-지도 않다) -ci(to) anhta	468	1	0038	-사이(에) -sai(ey)	68	2
0006	-어(아) 오다 -e(a) ota	428	1	0039	-은 채 -un chay	66	3
0007	-어 있다 -e issta	392	1	0040	에 따라(서) ey ttalase	62	1
0008	-(이)야 -(i)ya	330	4	0041	(것) 밖(에) (kes) pakkey(nun)	60	3
0009	-어 보다 -e pota	310	1	0042	-(었)거든요 -(ess)ketunyo	60	2
0010	-어 지다 -e cita	293	1	0043	-ㄴ/르대로 -n/l taylo	58	1
0011	-다고 (보다) -tago (pota)	276	4		(cf. 끝나는 대로 kkuthnanun taylo)		
0012	-게 되다 -key toyta	243	1	0044	-기 시작하다 -ki sicakhata	55	1
0013	-을 수(가) 있다 -ul swu issta	225	1	0045	-거나 -거나 -kena -kena	54	2
0014	-었던 -essten	213	1	0046	-스럼다 -surepta	52	2
0015	말이다 malita	211	1	0047	-은테요 -unteyyo	51	1
0016	-까 -kka [interrogative]	208	1	0048	-았다가 -asstaka	50	2
0017	-다가 -taga	201	2	0049	(으)로부터 (u)roputhe	47	1
0018	-을 때 -ul ttay	189	1	0050	-기 위해(서) -ki wihay(se)	46	2
0019	-을/는 수(가) 없다 -ul/nun swu(ka) epsta	169	1	0051	-을 듯하다 -ul tushata	45	1
0020	-어야 하다 -eya hata	153	1	0052	-어 가지고 -e kaciko	40	1
0021	좀 com	145	1	0053	-어야겠다 -eyakeyssta	40	1
0022	-어 놓다 -e nohta	140	2	0054	예다(가) eyta(ka)	38	1
0023	-도록 (하다) -torok hata	119	2	0055	-으려면 -ulamyen	36	3
0024	에 있다 ey issta	114	1	0056	가장 kacang	36	2
0025	적으로 cekuro	113	3	0057	만하다 manhata	36	1
0026	-어 내다 -e nayta	111	1	0058	-잖아(요) -canha(yo)	33	1
0027	-적인 -cekin	109	3	0059	이 아니라 i anila	33	1
0028	-어 버리다 -e pelita	105	2	0060	-ㄴ/로양이다 -n/l moyangita	32	1
0029	-(었)더니 -(ess)teni	103	2	0061	-어야지 -eyaci	32	1
0030	-어 두다 -e twuta	99	1	0062	-ㄴ 양(이다) -n yang(ita)	31	1
0031	-으세요 -useyo	99	4	0063	마져 mace	31	3
0032	-단 말(이)야 -tan mali(ya)	98	1	0064	-균요 -kwunyo	30	1
0033	-에 대한 -ey tayhan	95	2	0065	-기로 하다 -kilo hata	30	1
				0066	-긴 kin [nominalizer ki + n]	30	1

rank	grammatical patterns	freg.	level of textbooks	rank	grammatical patterns	freg.	level of textbooks
0067	-어 달라고 하다 -e tallago hata	30	1	0110	-을까(하다) -ulkka(hata)	14	1
0068	-인가 -inka	30	2	0111	-는 동안(에) -nun tongan(ey)	13	1
0069	대신(에) taysin(ey)	30	2	0112	-은 거예요 -un keyeyyo	13	1
0070	-나사실(이 있다) -n sasil(i issta)	29	1	0113	-을 만큼 -ul mankhum	13	1
0071	으로 삼다 ulo samta	27	3	0114	-기는 -kinun	12	1
0072	-(으)려고 하다 -(u)ryeko hata	26	1	0115	-나 편이다 -n phenita	12	1
0073	-기만하면 -kimanhamyen	26	1	0116	-을 뻔하다 -ul pphenhata	12	2
0074	-더군(요) -tekwun(yo)	26	1	0117	-을텐데 -ultheyntey	12	3
0075	-을테니(까) -ultheyni(kka)	26	1	0118	-자고 (하다) -cako (hata)	12	2
0076	-고 나서 -ko nase	25	2	0119	-(있)겠다 -(ess)keyssna	11	4
0077	-에 대해서 -ey tayhayse	25	2	0120	-고 보니 -ko poni	11	2
0078	반면(에) panmyen(ey)	25	3	0121	-기가 바쁘게 -kika pappukey	11	3
0079	-은 일이 있다 -un ili issta	24	1	0122	-는 바람에 -nun palamey	11	1
0080	-기 전에 -ki ceney	23	1	0123	-을 계획이다 -ul kyeohoykita	11	1
0081	-어 드리다 -e tulita	23	1	0124	의해 uihay	11	4
0082	-을 정도로 -ul cengtolo	23	3	0125	전혀 cyenhye	11	2
0083	거의 keui	23	2	0126	(으)로 해서 (ulo) hayse	10	1
0084	더러 tele	22	3	0127	-든지 -든지 -tunci -tunci	10	2
0085	-기까지 -kikkaci	21	3	0128	-어도 좋다 -eto cohta	10	1
0086	만일 (-으면) manil (-umyen)	21	4	0129	(될 수 있)는 한 (toyl swu iss)nun han	9	3
0087	탓(이다) thas(ita)	21	3	0130	-대요 -tayyo	9	1
0088	(을) 포함(해서) (ul) phoham(hayse)	20	3	0131	-을 거예요 -ul keyeyyo	9	1
0089	-답다 -tapta	20	2	0132	-을 무렵 -ul mulyep	9	4
0090	-으세 -usey	20	4	0133	-을래요 -ullayyo	9	1
0091	-을 것(까지) 없다 -ul kes(kkaci) epsta	20	3	0134	-움직하다 (직하다) -umcikhata (mcikhata)	9	1
0092	-나요 -nayo	19	1	0135	(이)외에 (i)loyey	8	3
0093	-는 점(에서) -nun cem(eyse)	19	1	0136	-(으)러 가다 -(u)le kata	8	1
0094	뿐만 아니라 ppun(man) anila	19	1	0137	-나적(이) 없다 -n ceki epsta	8	1
0095	끝에 kkuthey	18	3	0138	-어 대다 -e tayta	8	1
0096	(느)냐고 (하다) (nu)nyako (hata)	17	2	0139	-어서는 안되다 -esenun antoyta	8	1
0097	-나/르셈이다 -n/l seymita	17	1	0140	-으면 하다 -umyen hata	8	3
0098	-을 가능성이 있다/크다/높다 -ul kanungsengi issta/khuta/nophta	17	4	0141	-을 리가 없다 -ul lika epsta	8	2
0099	상(역사상, 사실상) sang(yeksasang, sasilsang)	17	4	0142	을 토대로 ul thotaylo	8	4
0100	에 관한 ey kwanhan	16	1	0143	-(은) 채하다 -(un) cheyhata	7	2
0101	을/를 제외하(고)ul/hul ceywoyha(ko)	16	4	0144	-나/르 바 -n/l pa	7	1
0102	일단 (-다 하빈) ilan (-ta hamyen)	16	4	0145	-었더니 -essteni	7	1
0103	-(으)십니다 -(u)sipnita	14	1	0146	-은/는가요 -un/nunkayo	7	3
0104	-기 마련이다 -ki malyenita	14	3	0147	-을 수밖에 없다-ul swupakkey epsta	7	2
0105	-어다 주다 -eta cwuta	14	1	0148	가 아니라 ka anila	7	1
0106	-어야 되다 -eya toyta	14	1	0149	같은 것 kathun kes	7	1
0107	-을 만하다 -ul manhata	14	1	0150	아무 -나 amu -na	7	2
0108	-을 예경이다 -ul yeycengita	14	1	0151	에 불과하다 ey pulkwahata	7	4
0109	-을 터(이다) -ul the(ita)	14	1	0152	이야말로 iyamallo	7	3
				0153	(에)서부터 (ey)seputhe	6	1

rank	grammatical patterns	freg.	level of textbooks	rank	grammatical patterns	freg.	level of textbooks
0154	(으)로 인해서 (u)lo inhayse	6	1	0195	절대로 celtaylo	4	2
0155	-고 나자 -ko naca	6	2	0196	-고자 하다 -koca hata	3	3
0156	-기에는 (너무 억울하다) -kieynun (nemu ekwulhata)	6	4	0197	-기 짝이 없다 -ki ccaki epsta	3	1
0157	-는 도중(에) -nun tocwung(ey)	6	1	0198	-기를 바라다 -kilul palata	3	1
0158	-던 때 -ten ttay	6	1	0199	-ㄴ/르범이다 -n/l pepita	3	1
0159	-은 결과(로) -un kyeikwa(io)	6	1	0200	-나 보다 -na pota	3	1
0160	-은 때 -un ttay	6	1	0201	-는 길로 -nun kilo	3	1
0161	-을 통해서 -ul thonghayse	6	2	0202	-다니까(요) -tanikka(yo)	3	1
0162	-을 필요가 있다 -ul philyoka issta	6	1	0203	-더라고(요) -telako(yo)	3	1
0163	-자면 -camyen	6	3	0204	-어 빠지다 -e ppacita	3	1
0164	만 해도 man hayto	6	3	0205	-어서라도 -eselato	3	1
0165	심지어 simcie	6	4	0206	-었었- -essess-	3	1
0166	(내가) 보기에는 (nayika) pokieymun	5	1	0207	-을 일이 있다 -ul ili issta	3	1
0167	- V + 을 뿐(만) 아니라 - V + ul ppun(man) anila	5	1	0208	-을지라도 -ulcilato	3	4
0168	-고 나면 -ko namyen	5	2	0209	-을테면 -ultheymyen	3	1
0169	-ㄴ 다음에 -n taumey	5	1	0210	만약 -으면 manyak -umyen	3	4
0170	-느니 (아예, 차라리) -지 -nuni (aye, chalali) -ci	5	4	0211	못지 않게 mosci anhkey	3	1
0171	-는 때 -nun ttay	5	1	0212	예도 불구하고 eyto pulkwuhako	3	3
0172	-는 만큼 -nun mankhum	5	1	0213	이외에 ioyey	3	1
0173	-어서 죽겠다 -ese cwukkeyssta	5	1	0214	(이)고 뭐고 (i)ko mweko	2	1
0174	-은 척(하다) -un chek(hata)	5	1	0215	-(기가) 예상이다 -(kika) yeysaita	2	4
0175	-은 후에 -un huey	5	1	0216	-(은) 체 앓다 -(un) chey anhta	2	2
0176	-은/는걸요 -un/nunkelyo	5	3	0217	-게 마련이다 -key malyenita	2	3
0177	-을 지경이다 -ul cikyengita	5	4	0218	-기야 -kiya	2	1
0178	-지 그래(요) -ci kulay(yo)	5	2	0219	-길래 -killay	2	2
0179	과 같이 kwa kathi	5	1	0220	-ㄴ 김에 -n kimey	2	1
0180	기어코 kiekho	5	4	0221	-ㄴ 적이 있다 -n ceki issta	2	1
0181	먼서(요) myense(yo)	5	2	0222	-나 실다 -na sipta	2	1
0182	하도 (너무) -어서 hato (nemu) -ese	5	1	0223	-는 중(에) -nun cwung(ey)	2	1
0183	-(으)려다가 (말고) -(u)ryetaka (malko)	4	1	0224	-다던데 -tatentey	2	3
0184	-곤 하다 -kon hata	4	3	0225	-다든지 -tatunci	2	1
0185	-기 싫다 -ki silhta	4	1	0226	-던 참이다 -ten chamita	2	1
0186	-기보다는 -kipotanun	4	3	0227	-라는 뜻(이다) -lanun ttus(ita)	2	4
0187	-네요 -neyyo	4	1	0228	-어 치우다 -e chiwuta	2	1
0188	-는 길에 -nun kiley	4	1	0229	-으면, 얼마나 좋겠어요 -umyen, elmana cohkeysseyo	2	2
0189	-는 길이다 -nun kilita	4	1	0230	-을 도리가 없다 -ul tolika epsta	2	1
0190	-비니지만 -pnitaman	4	4	0231	-을 도리가 있다 -ul tolika issta	2	1
0191	-어도 되다 -eto toyta	4	1	0232	-을 마음이 있다 -ul maumi issta	2	2
0192	-었더라면 -았을텐데 -etsstelarmyen -assultheyntey	4	1	0233	-자니 -cani	2	1
0193	-은 만큼 -un mankhum	4	1	0234	비록 (-을지라도) pilok (-ulcilato)	2	4
0194	설마 selma	4	4	0235	예 못지 않게 ey mosci anhkey	2	1
				0236	예 지나지 않다 ey cinaci anhta	2	3
				0237	어서라도 eyselato	2	3
				0238	여간 yekan	2	4
				0239	예를 들어 yeyhul tule	2	3



rank	grammatical patterns	freg.	level of textbooks	rank	grammatical patterns	freg.	level of textbooks
0240	은케녕 unkhenyeng	2	3	0254	-는등 마는등	1	3
0241	이고 뭐고 iko mweko	2	4		-nuntwung manuntwung		
0242	이라든지 ilatunci	2	3	0255	-는들 -nuntul	1	4
0243	좀처럼 comchelem	2	4	0256	-은 감이 있다 -un kami issa	1	4
0244	-(으)려던 참이다 -(u)lyeten chamita	1	1	0257	-을 따름이다 -ul ttarumita	1	4
0245	-고 말고요 -ko malkoyo	1	2	0258	-을 목적으로 -ul mokcekulo	1	1
0246	-기 그지없다 -ki kuciepsta	1	4	0259	당연히 -지 tangyenhi -ci	1	4
0247	-ㄴ가 보다 -nka pota	1	1	0260	갑소사 mapsosa	1	4
0248	-노라면 -nolamyen	1	3	0261	어느 -(이)나 enu -(i)na	1	1
0249	-는 대신에 -nun taysiney	1	2	0262	에 비하면 ey pihamyen	1	1
0250	-는 바 -nun pa	1	4	0263	에 의하면 ey uyhamyen	1	3
0251	-는 비롯이 있다 -nun pelusi issa	1	1	0264	이라서 ilase	1	3
0252	-는 설이 있다 -nun seli issa	1	4	0265	자칫(하면) caxis(hamyen)	1	4
0253	-는 일이 있다 -nun ili issa	1	1	0266	(도) -을 겸 (to) -ul kyem	0	1

From 0267 to 0334 with occurring frequency of 0 are omitted here.

List 7 contains the results of frequency rankings of grammatical patterns based on the lists developed in the above section. The number on the right side of the page indicates the frequency of appearance.

List 7 raises a number of issues regarding the method of adopting and ordering grammatical patterns for Korean textbooks. One of the most prominent issues is the items that are ranked as low frequency. Of the 353 items, 79 do not appear in textbooks at all, and 110 appear five times or less. Adopting these items early in a pedagogical syllabus thus lowers the validity of the syllabus. That items of such low frequency appear in current Korean textbooks indicates that the materials contain expressions that are removed from real language or that reflect translations from the source language. In addition, in the case of items that appear frequently, an awareness of the order of frequency of verbal endings and grammatical patterns is necessary in developing effective materials. To improve the effectiveness of materials, items that appear a 100 times or more should be classified as "group 1," those that appear 50-99 times as "group 2," those that appear 10-49 times as "group 3," and those that appear less than 9 times as "group 4." This type of classification scheme allows for the creation of an objective standard that all grammatical syllabi can follow without sacrificing creativity.

### 3. Conclusion

#### 3.1. Applying Research Findings

The research findings discussed in this paper have the following applications:

First, they establish a standard for redeveloping the grammatical syllabus used in teaching KSL/KFL (Korean as a second or foreign language). To do so, a thorough investigation of the presentation of verbal endings and grammatical patterns in existing KSL/KFL teaching materials is needed. Findings from such an investigation will show how the findings from this research can be used to improve the materials.

Second, they can be used to establish a standard from which order of presentation of morphemes in textbooks for Korean school children can be reevaluated. Likewise, a reevaluation of exercises containing verbal endings and grammatical patterns will stimulate textbook writers to adopt the most natural order of presentation.

Third, they allow developers of machine translation software (particularly English-Korean and Japanese-Korean) to determine which Korean expressions are more likely to be used in cases where two or more Korean expressions are acceptable. Because most research on computer automated translation takes place in technical fields, the use of quantitative linguistics research in designing software programs allows linguistics to make an important contribution to fields outside of the humanities.

Fourth, results from the examination of verbal endings are applicable to selecting the basic forms of a morpheme with several surface-level manifestations. In determining what should be considered the basic form, naturalness of explanation and historical factors are important, but in cases where determining the basic form is difficult, the frequency of use provides a useful point of reference. However, because there has been a paucity of research on the frequency of verbal endings and grammatical patterns, it has not been possible even to consider the issue of frequency. Thus, for example, the past tense morpheme "at/ot/yot" has three surface-level manifestations, but from the perspective of frequency of use, "ot" is by far the most common manifestation and should therefore be considered the basic form of the past tense morpheme.

### 3.2. Remaining Issues

Though the findings of this research and their practical application are substantial, quantitative research on Korean is still in the early stages of development with a number of problems to overcome. One obvious problem is the need for more data. To make strong claims for their findings, researchers need to test and confirm their hypotheses through an examination of a large corpus of data. To increase the applicability of the findings from this paper, a more diverse categorization and analysis of the data is in order, as in the preceding example in the discussion of the frequency of the three past tense morphemes. To deal with these issues, an investigation of the distribution in different sources of data is needed. As discussed above, a second level of analysis based on a reclassification of categories and an analysis of these findings forms the next stage of this research. An example of a reclassification of the categories given in Appendix A is presented under the title "Frequency Order Shown by the Group of Allomorphs of the Same Ending"

Finally, this paper offers hope that an empirical investigation of the distribution and frequency of grammatical particles will contribute to a greater understanding of this frequently researched field of Korean linguistics.

#### Notes:

- 1) An earlier research on verbal endings was conducted in 1996 as part of a research project sponsored by the Korea Research Foundation and the following researches on endings and grammatical patterns have been conducted in 2000 with a support from the Development Fund for General Research of faculty members .
- 2) Considering the balance in the corpus, the sub-corpus of TV data is better. It is almost impossible to develop a corpus that reflects a balance in everyday spoken language. However, the colloquial and contracted forms are widely included in considering their difficulty to foreign learners.
- 3) In the process of analysis, some of these items were supplemented by other morphemes. For the convenience of analysis, some of the supplemented morphemes were not added to the list, and processed

with related lists. This was only done, however, when it was thought that this would improve the validity of the research. For instance, '-nun-' and '-te-' are shown in prefinal endings and also in agglutinated forms with final endings for two kinds of information: the frequency ranking of single and/or complex forms. In addition '-nuntey' and '-nunteytaka' are also counted respectively for distinguishable information.

- 4) It is a pity that because of length I cannot present all the list in the alphabetical order since it will serve as an co-referential index to find a certain item with its (P)FE no. in the list of frequency rank.

## References

- Altmann, G. (1978) 'Glottometrika 1,' *Quantitative Linguistics* 1, Studienverlag Dr. N. Brockmeyer.
- An, P.-H. (1965) 'Grammar (section), *Introduction to Korean Linguistics*,' Sudo Publishers.
- An, P.-H. (1967) 'History of Grammar, History of the Korean Language,' *Historical Survey of the Korean Culture* V, Korean Cultural Research Center, Korea University, 167-261.
- Kim, H.-G., K.-S. Song, & J.-S. Hong (1998) 'Statistical Analysis on Many Aspects of Large Korean Data Base,' *Computational Korean Linguistics* 2 (The Society of Computational Korean Linguistics), 1-169.
- Kim, H.-G., & B.-M. Kang (2000) *Frequency Analysis of Korean Morpheme and Word Usage*, Institute of Korean Culture.
- Lee, S.-O. (1986a) 'An Explanation of Syllable Structure Change in Korean,' *Language Research* 22.2, 195-213.
- \_\_\_\_\_ (1986b) 'Quantitative Linguistics (Lexicology Part): Phonological, Morphological and Semantic Structure of the Lexicon,' *Linguistic Journal of Korea* 11.2, 323-339.
- \_\_\_\_\_ (1989a) 'A Study in the Phonological and Morphological Structure of the Korean Lexicon -- A Quantitative Survey by Glottometrics,' *Language Research* 25.1, 111-128.
- \_\_\_\_\_ (1989b) 'A Glottometrical Study of Korean Lexicon,' *Harvard Studies in Korean Linguistics* III, Dept. of Linguistics, Harvard University, Hanshin Pub., 159-166.
- \_\_\_\_\_ (1990a) 'A Glottometrical Study of Korean Lexicon,' *Festschrift for Prof. Kang Shin-Hang*, T'aehaksa Publishers, Seoul, 331-346.

- \_\_\_\_\_ (1990b) 'Functional Load of Sound Changing Rules in Modern Korean,' *Language Research* 26.3, 441-467.
- \_\_\_\_\_ (1993) 'On the Functional Load of Syntactic Phenomena: A Quantitative Survey in Modern Korean,' *Festschrift for Prof. An Pyong-Hwi*, Sin'gumunhwasa Publishers, Seoul, 475-487.
- \_\_\_\_\_ (1995) 'Adjustment of Vowel Length in Korean Speech at Different Speeds,' *Korean Studies* 19 (The Center for Korean Studies, University of Hawaii), 162-173.
- \_\_\_\_\_ (1997a) 'Graphical Ingenuity in the Korean Writing System: With New Reference to Calligraphy,' in Young-Key Kim-Renaud *ed.*, *The Korean Alphabet: Its History and Structure*. University of Hawaii Press, Honolulu, 107-116.
- \_\_\_\_\_ (1997b) 'Quantitative Research on Verbal Endings in Modern Korean,' *Studies in Phonetics, Phonology and Morphology* 3, 203-222.
- Suh, Sang-Kyu (1998) Lexical Frequency of Modern Korean (upper part), Research Center of Linguistic Information, Yonsei University, Seoul.
- The Ministry of Education (1956) 'A Survey of Word Frequency in Korean.'

### [Appendix] <Pre-final and Final Endings Listed by Frequency Order>

The first column in the following list denotes the order from the investigation by Hung-gyu Kim et al. (1998) and is called "Korea Univ. ordering" of the frequency of endings. In this column parentheses indicate that item is not investigated in "Korea Univ. ordering." Unequal marks ( > or < ) used between the first and the second columns shows the difference by more than 10 ranks. Kim, H.-G., & B.-M. Kang (2000) is reported more recently but the ranking of endings is almost similar to Hung-gyu Kim et al. (1998).

The second part called "Pre-final and final endings listed by frequency order" is presented by the serial numbers of frequency order, starting from 001 and FE(final ending) the 127th item -ㄷ in the list arranged by the Korean alphabetical order; it has a frequency of 6069.

The third column in the following list denotes the order from the investigation by Suh, Sang-Kyu (1998) and is called "Yonsei Univ. ordering" of the frequency of endings. In this column parentheses indicate that item is not investigated in "Yonsei Univ. ordering." Unequal marks ( > or < ) used between the second and the third columns shows the difference

by more than 10 ranks.

The fourth part after Cf. <Frequency order of endings merged by different allomorphs of the same morpheme> is originated from the second part.

<Korea Univ. ordering>				<Yonsei Univ. ordering>				Cf.<Frequency order of endings merged by different allomorphs of the same morpheme>			
<Frequency order of pre-final and final ending>											
2	001	FE127	다 ta : 6039	3	1.	-ㄴ/-은 -n/-un(v.p., a.p.r.)	6648				
1	002	FE042	ㄴ n : 5790	< 25	2.	-다 -ta	6039				
4	003	FE021	고 ko : 3843	5	3.	-았/었/였 - -ass/ess/yess-	5252				
3	004	FE093	는 nun : 3056	6	4.	-고 -ko	3843				
5	005	PFE015	었 ess : 2454	2	5.	-는 -nun	3056				
8	006	FE371	어 e : 2341	4	6.	-아/-어 -a/-e	3411				
( )	007	PFE016	였 yess : 1498	( )	7.	-ㅁ/습니다 -p/supnita	1345				
6	008	PFE014	았 ass : 1300	( )	8.	-게 -key	1288				
10	009	FE017	게 key : 1288	8	9.	-아서/-어서 -ase/-ese	1128				
		(Conclusive and non-con. endings merged in -게.)				10.	-지 -ci	1109			
13	010	FE643	지 ci : 1109	9	11.	-ㄴ다/-는다 -nta/-nunta	1083				
7	011	FE355	아 a : 1070	( )	12.	-요 -yo	842				
25 >	012	FE326	ㅁ니다supnita : 870	< 45	13.	-야 -ya	656				
11	013	FE499	은 un : 858	1	14.	-면 -myen	562				
58 >	014	FE408	요 yo : 842	( )	15.	-기 -ki	531				
26 >	015	FE376	어서 ese : 674	11	16.	-며 -mye	480				
56 >	016	FE367	야 ya : 656	< 42	17.	-겠 -keyss-	453				
15	017	FE320	면 myen : 562	14	18.	-던 -ten	449				
46 >	018	PFE006	는(다)nun(ta) : 557	12	19.	-다고 -tako	440				
14	019	FE036	기 ki : 531	10	20.	-이다 -ita	441				
20	020	FE319	며 mye : 480	15	21.	-ㄴ/-을 -l/-ul	384				
19	021	FE347	습니다supnita : 475	13	22.	-자 -ca	361				
12 <	022	FE046	ㄴ다 nta : 454	34	23.	-면서 -myense	357				
18	023	FE360	아서 ase : 454	( )	24.	-시 -si-	352				
28	024	PFE002	겠 keyss : 453	22	25.	-는데 -nuntey	312				
16 <	025	FE158	던 ten : 449	16	(This is continued to the rank 033 on the left.)						
21	026	FE131	다고tako : 440	27							
( )	027	FE593	이다 ita : 411	( )							
39 >	028	FE638	자 ca : 361	29							
17 <	029	FE512	을 ul : 359	> 7							
30	030	FE321	면서myense : 357	26							
36	031	PFE013	시 si : 352	30							
29	032	FE115	는데nuntey : 312	28							

48	>	033	FE128	다가 taka	: 284	35	1285	>	082	FE600	이라 ila	: 56	
23	<	034	FE133	다논 tanun	: 271	> 23	139	>	083	FE007	거튼 ketun	: 55	
32		035	FE223	라 la	: 256	31	49	<	084	FE001	거나 kena	: 54	
41		036	FE120	니 ni	: 239	> 25	34	<	085	FE377	어야 eya	: 53	> 19
437	>	037	FE166	도 to	: 223	( )	1285	>	085	FE589	이냐 inya	: 53	
60	>	038	FE696	조 cyo	: 218	( )	70	<	087	FE257	려고 lyeko	: 52	> 50
27	<	039	FE647	지만 ciman	: 209	> 20	63	<	087	FE374	어도 eto	: 52	> 33
( )		040	PFE007	더 te	: 196	( )	164	>	089	FE409	우 wu	: 51	
51		041	FE567	음 um	: 193	> 18	64	<	090	FE648	지요 ciyo	: 49	
42		042	FE071	나 na	: 180	> 17	106	>	090	FE663	다며 tamye	: 49	
52		043	FE062	ㄴ테 ntey	: 177	( )	( )		092	FE630	이요 iyo	: 48	
230	>	044	FE386	여 ye	: 174	47	345	>	093	FE095	는걸 nunkel	: 47	
40		045	FE379	어요 eyo	: 170	> 21	92		094	FE172	듯이 tusi	: 46	
91	>	046	FE171	뜻 tus	: 165	( )	1285	>	095	FE037	기로 kilo	: 45	
( )		047	PFE001	거 ke	: 163	( )	71	<	096	FE364	아요 ayo	: 43	
72	>	048	FE076	냐 nya	: 156	( )	( )		097	FE041	기에 kiew	: 41	
88	>	049	FE395	오 o	: 154	39	69	<	097	FE261	려는 lyenun	: 41	
234	>	050	PFE009	리 li	: 147	( )	1042	>	097	FE370	야지 yaci	: 41	
122	>	051	FE307	리라 lila	: 134		96		100	FE245	러 le	: 40	
( )		052	PFE005	느(ㄴ/냐/ㄴ지) : 127			81	<	100	FE385	예요 eyo	: 40	
				nu(n/nya/nci)			97		102	FE080	네 ney	: 39	
66	>	053	FE022	고는 konun	: 118		87	<	102	FE346	습니까 supnikka	: 39	
144	>	054	FE035	균 kwun	: 117		220	>	104	FE010	거라 kela	: 38	
43	<	055	FE167	도록 torok	: 117	> 44	374	>	105	FE044	ㄴ걸 nkel	: 37	
44	<	056	FE681	으면 umyen	: 115		1285	>	105	FE628	이며 imye	: 37	
24	<	057	FE226	라논 lanun	: 114	> 37	( )		107	FE187	라라고 llako	: 36	
37	<	058	FE484	으며 umye	: 112		623	>	108	FE670	래도 layto	: 35	
47	<	059	FE410	으나 una	: 111		109		109	PFE019	으시 usi	: 34	
22	<	060	FE224	라고 lako	: 105	> 32	172	>	110	FE077	냐고 nyako	: 32	
78	>	061	FE150	더니 teni	: 103	60	86	<	111	FE232	라면 lamyen	: 31	
84	>	062	FE340	세요 seyyo	: 99		1285	>	111	FE636	인지 inci	: 31	
35	<	063	FE043	ㄴ가 nka	: 91		33	<	113	FE361	아야 aya	: 30	
( )		064	FE633	이지 ici	: 86		529	>	114	FE072	나니 nani	: 29	
38	<	065	FE048	ㄴ다논 tanun	: 85		( )		114	FE388	여라 yela	: 29	
1285	>	066	FE635	인테 intey	: 82		101	<	116	FE169	튼 tun	: 28	
65		067	FE121	니까 nika	: 76	> 43	84	<	116	FE254	려 lye	: 28	
82	>	068	FE087	느냐 nunya	: 74		74	<	116	FE515	울까 ulkka	: 28	> 38
55	<	069	FE068	ㄴ지 nci	: 72		810	>	116	FE591	이니 ini	: 28	
46	<	069	FE103	는다 nunta	: 72		1285	>	116	FE682	이면 imyen	: 28	
54	<	069	FE117	는지 nunci	: 72	> 48	331	>	121	FE148	더군 tekun	: 26	
111	>	072	FE030	구나 kwuna	: 70		117		121	FE231	라며 lamye	: 26	
79		072	FE230	라도 lato	: 70		9	<	123	FE174	르 l	: 25	
73		074	FE138	다며 tamyen	: 66		1042	>	124	FE045	ㄴ고 nko	: 24	
113	>	074	FE375	어라 ela	: 66		132		125	FE134	다니 tani	: 22	
128	>	076	FE025	고서 kose	: 61		695	>	125	FE644	치는 cinun	: 22	
75		077	FE414	으니 uni	: 60		50	<	127	FE094	는까 nunka	: 21	> 51
67	<	078	FE341	소 so	: 59		144	>	127	FE664	매 tay	: 21	
118	>	079	FE170	든지 tunci	: 58		248	>	129	FE123	ㄴ칸 mikkan	: 20	
98	>	079	FE359	아라 ala	: 58		133		129	FE168	되 toy	: 20	
80		081	FE325	버니까 pnikka	: 57		167	>	129	FE477	으리라 ulila	: 20	

116 <	129	FE503	은테 untey	: 20	180	FE204	르세 lsey	: 9	
482 >	129	FE572	윽니까upnikka	: 20	180	FE227	라니 lani	: 9	
216 >	129	FE650	질 cil	: 20	76 <	180	FE358	아도 ato	: 9
( )	129	FE692	이지만iciman	: 20	183	FE018	게나 keyna	: 8	
1285 >	136	FE366	앗습니다ass-		183	FE089	느뇨 nunyo	: 8	
			supnita	: 19	183	FE097	눈구나 nunkwuna	: 8	
203 >	137	FE154	더라 tela	: 18	183	FE173	디 ti	: 8	
( )	137	FE389	여서 yese	: 18	183	FE239	란다 lanta	: 8	
495 >	139	FE098	눈구려nunkwulye	: 17	183	FE317	마 ma	: 8	
345 >	139	FE102	눈곤nunkun	: 17	183	FE422	으라 ula	: 8	
271 >	139	FE669	르래 llay	: 17	183	FE435	으려 ulye	: 8	
( )	142	FE630	이오 io	: 16	183	FE649	진 cin	: 8	
1285 >	143	FE434	으러 ule	: 15	183	FE668	래 lay	: 8	
192 >	143	FE573	윽니다upnita	: 15	183	FE683	이켄 iken	: 8	
1285 >	143	FE691	이어서 iese	: 15	194	FE065	느바 npa	: 7	
104 <	146	FE023	고도 koto	: 14	194	FE083	노라 nola	: 7	
143	146	FE088	느나고nunyago	: 14	194	FE092	느라고 nulako	: 7	
108 <	146	FE105	느다는nuntanun	: 14	194	FE130	다간 takan	: 7	
83 <	146	FE212	르지 lci	: 14	194	FE176	르결 lkel	: 7	
( )	146	FE393	윽습니다yess-		194	FE228	라니까 lanikka	: 7	
			supnita	: 14	194	FE264	려는떼lyenuntey	: 7	
107 <	146	FE415	으니까unikka	: 14	194	FE423	으라고 ulako	: 7	
( )	146	FE417	으니깐unikkan	: 14	194	FE640	자마자 camaca	: 7	
( )	146	FE501	은결 unkel	: 14	194	FE645	지를 cilul	: 7	
115 <	154	FE011	컨 ken	: 13	204	FE129	다가는 takanun	: 6	
99 <	154	FE028	곤 kon	: 13	204	FE207	르수록 lswulok	: 6	
( )	154	FE078	냐는 nyanun	: 13	204	FE266	려니 lyeri	: 6	
77 <	154	FE155	더라도telato	: 13	204	FE269	려다가 lyetaka	: 6	
( )	154	FE694	시우 siwu	: 13	105 <	204	FE275	려면lyemyen	: 6
316 >	159	FE079	넌라 nela	: 12	141 <	204	FE332	비시오psio	: 6
657 >	159	FE081	노니 noli	: 12	204	FE432	으랴 ulya	: 6	
743 >	159	FE243	랴 rya	: 12	204	FE500	은가 unka	: 6	
236 >	159	FE485	으세요useyyo	: 12	204	FE672	려면 lyemyen	: 6	
472 >	159	FE660	넌단 nuntan	: 12	204	FE674	마는 manun	: 6	
185 >	164	FE090	느니 nuni	: 11	204	FE688	이니까 inikka	: 6	
185 >	164	FE139	다면서tamyense	: 11	204	FE695	시요 siyo	: 6	
159 >	164	FE140	다시파tasiphi	: 11	216	FE137	다만 taman	: 5	
374 >	164	FE149	더냐 tenya	: 11	216	FE141	다오 tao	: 5	
? >	164	FE159	던가 tenka	: 11	216	FE233	라면서 lamyense	: 5	
275 >	164	FE162	던떼 tendey	: 11	216	FE237	라오 lao	: 5	
695 >	164	FE183	르께 lkkey	: 11	216	FE238	락 lak	: 5	
695 >	164	FE255	려거튼lyeketun	: 11	216	FE281	려오 lyeo	: 5	
215 >	164	FE339	세 sey	: 11	216	FE306	리다 lita	: 5	
1285 >	164	FE604	이라면ilamyen	: 11	216	FE514	을결 ulkel	: 5	
( )	164	FE652	느때다ntehta	: 11	216	FE524	을라고 ullako	: 5	
103 <	164	FE676	으므로umulo	: 11	119 <	216	FE566	을저ulci	: 5
127 <	176	FE104	느나고nuntako	: 10	226	FE015	건만 kenman	: 4	
112 <	176	FE159	던가 tenka	: 10	226	FE135	다마는 tamanun	: 4	
	176	FE297	로곤 lokwun	: 10	226	FE156	더라면 telamyen	: 4	
	176	FE322	면은 myenun	: 10	226	FE160	던결 tenkel	: 4	



	226	FE201	르밖에 lpakkey : 4	273	FE132	다느니 tanuni : 2
	226	FE277	려무나 lyemuna : 4	273	FE145	더구나 tekwuna : 2
95 <	226	FE323	므로 mulo : 4	273	FE164	던지 tenci : 2
142 <	226	FE363	아야지 ayaci : 4	273	FE175	르거나 lkena : 2
	226	FE323	므로 mulo : 4	273	FE184	르꼬 lkko : 2
	226	FE363	아야지 ayaci : 4	273	FE198	르망정 lmangceng : 2
	226	FE368	야만 yaman : 4	273	FE199	르바 lpa : 2
	226	FE373	어다가 etaka : 4	273	FE229	라든지 latunci : 2
	226	FE412	으냐 unya : 4	273	FE258	려나 lyena : 2
150 <	226	FE438	으려고ulyeko : 4	273	FE267	려니와 lyeniwa : 2
	226	FE442	으려는 ulyenun : 4	273	FE287	럼 lyem : 2
	226	FE582	이거나 ikena : 4	273	FE300	로라 lola : 2
	226	FE585	이거든 iketun : 4	273	FE304	리니 lini : 2
	226	FE588	이기에 ikiey : 4	273	FE356	아다 ata : 2
	226	FE592	이니깐 inikkan : 4	273	FE357	아다가 ataka : 2
	226	FE653	ㄴ데도 nteyto : 4	273	FE382	언만 enman : 2
	226	FE655	보담 potam : 4	273	FE390	여야 yeya : 2
	226	FE689	이라든가ilatunka : 4	273	FE436	으려거든ulyeketun : 2
110 <	226	FE693	자는 canun : 4	273	FE449	으려다 ulyeta : 2
	226	PFE008	로(구나/구려) : 4	273	FE472	으리 uli : 2
			lo(kwuna/kwulye)	273	FE476	으리다 ulita : 2
	250	FE003	거니 keni : 3	273	FE605	이라야 ilaya : 2
89 <	250	FE027	고자 koca : 3	273	FE621	이로구나ilokuna : 2
	250	FE033	구면 kwumen : 3	273	FE624	이로곤 ilokun : 2
	250	FE058	ㄴ대 ntay : 3	273	FE626	이로되 ilotoy : 2
	250	FE142	단다 tanta : 3	273	FE658	나카 nyaka : 2
	250	FE205	르세라 lseyla : 3	273	FE659	누나 nwuna : 2
	250	FE265	려는지 lyenunci : 3	273	FE662	다네 taney : 2
	250	FE268	려다 lyeta : 3	273	FE671	래야 layya : 2
	250	FE285	련만 lyenman : 3	273	FE677	이므로 imulo : 2
	250	FE288	럼니까 lyepnikka : 3	273	FE685	이긴 ikin : 2
	250	FE353	시거든 siketun : 3	273	FE687	이뇨 inyo : 2
	250	FE392	여요 yeyo : 3	311	FE002	거늘 kenul : 1
	250	FE447	으려니 ulyeni : 3	311	FE026	고야 koya : 1
	250	FE474	으리니 ulini : 3	311	FE032	구료 kwulyo : 1
	250	FE523	올라 ulla : 3	311	FE034	구면 kwumyen : 1
	250	FE569	음에도 umeyto : 3	311	FE050	나니까ntanikka : 1
	250	FE590	이네 iney : 3	311	FE053	나달 ntal : 1
	250	FE625	이로다 ilota : 3	311	FE059	나대서 ntayse : 1
	250	FE642	잘 cal : 3	311	FE066	ㄴ죽 ncuk : 1
	250	FE651	ㄴ답니까ntapnikka : 3	311	FE084	노라고 nolako : 1
	250	FE656	냐며 nyamye : 3	311	FE086	노라면 nolamye : 1
	250	FE665	답니다 tapnita : 3	311	FE108	는달 nuntal : 1
	250	FE675	면야 myenya : 3	311	FE116	는바 nunpa : 1
	273	FE004	거니와 keniwa : 2	311	FE202	르뿐더리ppuntele : 1
	273	FE008	거들랑 ketullang : 2	311	FE222	르진저 lcince : 1
	273	FE012	전대 kentay : 2	311	FE235	라야 laya : 1
	273	FE031	구려 kwulye : 2	311	FE241	랍니다 lapnita : 1
	273	FE073	나마 nama : 2	311	FE263	려노고 lyemunko : 1
	273	FE096	논고 nunko : 2	311	FE298	로다 lota : 1

	311	FE316	모직하다 <i>mcikhata</i>	: 1		311	FE581	이 <i>i</i>	: 1
	311	FE318	매 <i>may</i>	: 1		311	FE587	이기로 <i>ikilo</i>	: 1
	311	FE362	아야만 <i>ayaman</i>	: 1		311	FE617	이려니와 <i>ilyeniwa</i>	: 1
120 <	311	FE372	어다 <i>eta</i>	: 1		311	FE629	이므로 <i>imulo</i>	: 1
	311	FE400	올시다 <i>olsita</i>	: 1		311	FE646	지마는 <i>cimanun</i>	: 1
	311	FE411	으나마 <i>unama</i>	: 1		311	FE654	ㄴ테서 <i>nteyse</i>	: 1
	311	FE421	으되 <i>utoy</i>	: 1		311	FE657	냐면서 <i>nyamyense</i>	: 1
	311	FE428	으라면 <i>ulamyen</i>	: 1		311	FE661	는도다 <i>nuntota</i>	: 1
	311	FE430	으락 <i>ulak</i>	: 1		311	FE666	듣가 <i>tunka</i>	: 1
	311	FE450	으려다가 <i>hulyetaka</i>	: 1		311	FE673	로구만 <i>lokwuman</i>	: 1
	311	FE454	으려도 <i>ulyeto</i>	: 1		311	FE679	으래 <i>ulay</i>	: 1
	311	FE462	으려오 <i>ulyeo</i>	: 1		311	FE680	쇼 <i>syo</i>	: 1
	311	FE466	으련만 <i>uhyenman</i>	: 1		311	FE684	이거니 <i>ikeni</i>	: 1
	311	FE482	으마 <i>uma</i>	: 1		311	FE686	이길래 <i>ikilae</i>	: 1
	311	FE483	으매 <i>umay</i>	: 1		361	FE005	거드면 <i>ketumyen</i>	: 0
	311	FE509	은지 <i>unci</i>	: 1				(356 itmes with frequency of 0 are omitted in between 거드면 and 잠.)	
	311	FE517	올까말까 <i>ulkkamalkka</i>	: 1		361	PFE024	잠 <i>cap</i>	: 0
	311	FE522	을는지 <i>ulnunci</i>	: 1					

Department of Korean Language and Literature  
 Seoul National University  
 San 56-1 Sillim-dong, Gwanak-gu  
 Seoul 151-745, Korea  
 E-mail : sangoak@snu.ac.kr